International Upper Great Lakes Study

Status: In Progress

Project Manager: Tony Eberhardt

Purpose: The purpose of the International Upper Great Lakes Study (IUGLS) is to investigate improvements to the regulation of the outflow of Lake Superior given the impacts regulation may have on water levels, flows, and affected resources throughout the upper Great Lakes system. It will closely examine the physical processes driving current Great Lakes water level conditions, and possible ongoing changes in the St. Clair River and their impacts on river flow and Lakes Michigan and Huron levels. These two issues are interrelated in that the outflow of Lakes Michigan-Huron, through the St. Clair River, plays a direct role in determining lake level, which in turn affects the regulated outflow from Lake Superior and the regulation objectives of the International Joint Commission (IJC) Orders. Depending on the nature and extent of the possible St. Clair River changes and impacts reviewed during the course of the study, potential remediation measures would also be investigated. Remediation measures could include structural and non-structural approaches.

Objective: The issues will be investigated by two Task Teams (TTs): the Lake Huron Outflow/ St. Clair River Task Team and the Lake Superior Regulation Task Team. The Lake Huron Outflow/ St. Clair River Task Team will focus on that part of the International Upper Great Lakes Study (IUGLS) which addresses the issues raised in the Plan of Study (POS) related to historic changes in the hydraulic conveyance capacity of the St. Clair River due to man-made changes (dredging, gravel mining, ship wrecks, hardening of the shoreline, conveyance constrictions due to bridges and other infrastructure, etc), natural physical changes associated with glacial isostatic rebound, overall reduction in net basin supplies due to climate change and variability effecting the Lake Huron outflow, or a combination of all of the aforementioned causes. Whatever the causes, the Task Team will also recommend a range of technically feasible corrective remediation/mitigation actions, both structural and non-structural, if they are deemed warranted.

Benefits: The Study will develop state-of-the art procedures to determine if conveyance in the St. Clair River has changed increasing the state of knowledge regarding hydraulic modeling.

The phase investigating outflow management alternatives will utilize shared vision planning techniques to gather stakeholder input. It will also consider short- and long-term climate change scenarios to test the robustness of alternatives and propose an adaptive management strategy for addressing climate change. The SVP and climate

change/ AM will provide economic and environmental benefits to Great Lakes stakeholders through improved water level management and serve as frameworks for future integrated water management projects and studies both nationally and internationally.

Progress: The second phase of the Study will investigate changes to the outflow management plan of Lake Superior (Plan 1977-A). Six Technical Work Groups (Recreational Boating and Tourism; Coastal Processes; Commercial Navigation; Hydropower; Municipal, Domestic and Industrial Water Uses, and Ecosystems) will select performance indicators and metrics that will be incorporated into a Shared Vision Model to arrive at alternative management plans. This phase will be complete by April 2012. It will include recommendations for mitigation if warranted and an adaptive management plan to be in place after the selected alternative plan is implemented.

Products:

Related Links:

- IUGLS Web Site *(project web site)*

Partners:

- Buffalo District
- CDM
- Department of Fisheries and Oceans-Canada
- Detroit District
- Environment Canada
- ERDC Coastal and Hydraulics Laboratory
- Great Lakes and Ohio River Division
- Headquarters
- International Joint Commission
- Louis Berger Group
- Michigan DNR
- NOAA
- University of Colorado
- University of Illinois-Urbana-Champaign
- University of Minnesota
- US Army Cold Regions Research & Engineering Lab
- US Army Engineer Research and Development Center
- Wisconsin DNR